

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

## PCT

To:

see form PCT/ISA/220

### WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/EP2004/053251

International filing date (day/month/year)  
03.12.2004

Priority date (day/month/year)  
03.12.2003

International Patent Classification (IPC) or both national classification and IPC  
A61B5/113, A61B5/0408

Applicant  
MILIOR S.P.A.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☒ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/EP2004/053251

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**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:
    - ☐ a sequence listing
    - ☐ table(s) related to the sequence listing
  - b. format of material:
    - ☐ in written format
    - ☐ in computer readable form
  - c. time of filing/furnishing:
    - ☐ contained in the international application as filed.
    - ☐ filed together with the international application in computer readable form.
    - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/EP2004/053251

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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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**1. Statement**

Novelty (N)	Yes: Claims	2,4-18
	No: Claims	1,3
Inventive step (IS)	Yes: Claims	
	No: Claims	2,4-18
Industrial applicability (IA)	Yes: Claims	1-18
	No: Claims	

**2. Citations and explanations**

**see separate sheet**

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**Box No. VI Certain documents cited**

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**1. Certain published documents (Rules 43bis.1 and 70.10)**

**and /or**

**2. Non-written disclosures (Rules 43bis.1 and 70.9)**

**see form 210**

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING  
AUTHORITY (SEPARATE SHEET)**

PCT/EP2004/053251

**Re Item V.**

- 1 Reference is made to the following document:

D1 : PARADISE R ET AL: "Knitted bioclothes for cardiopulmonary monitoring"  
PROCEEDINGS OF THE 25TH. ANNUAL INTERNATIONAL CONFERENCE  
OF THE IEEE ENGINEERING IN MEDICINE AND BIOLOGY SOCIETY.  
CANCUN, MEXICO, SEPT. 17, vol. VOL. 4 OF 4. CONF. 25, 17 September  
2003 (2003-09-17), pages 3720-3723, XP010691633 ISBN: 0-7803-7789-3

D2: GB-A-1 417 394 (IMPERIAL CHEMICAL INDUSTRIES LTD) 10 December  
1975 (1975-12-10)

2 INDEPENDENT CLAIM 1, 13 - 16

- 2.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

Document D1 discloses (the references in parentheses applying to this document):

Knitted fabric wherein piezoresistive sensors for the monitoring of movement and breathing, electrodes for the monitoring of cardiac activity and breathing, and conductive connections for the transmission of signals are integrated (abstract; figure 2).

- 2.2 Thus, the subject-matter of claim 1 is not new (Article 33(2) PCT).

- 2.3 Since D1 also refers to detecting breathing pattern (section II, second sentence) and breathing signals are related to movement, claim 14 also lacks novelty (Article 33(2) PCT).

- 2.3 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 13, 15, and 16 does not involve an inventive step in the sense of Article 33(3) PCT.

- 2.4 With regard to claim 13, D1 refers to monitoring activity, ECG, and breathing pattern (section II, first para.). For the man skilled in the art, breathing patterns obviously include breathing activity and respiratory frequency. Thus, claim 13 discloses in addition to what is known from D1 detection of EOG and EMG signals. However, the man skilled in the art known about these signals and according to circumstances, would use the known fabric according to D1 for the detection of EOG and EMG signals without applying an inventive step.
- 2.5 With regard to claim 15, the same arguments, *mutatis mutandis*, as for claim 13 apply. Impedance pneumography is well known in the art and would obviously be applied by the man skilled in the art.
- 2.6 With regard to claim 16, a double-bed jersey technique is a well known technique in the field of knitting (see also D2, Example 13) and cannot support an inventive step.
- 2.7 Thus, claims 13, 15, and 16 lack an inventive step (Article 33(3) PCT).

### **3. DEPENDENT CLAIMS**

- 3.1 Dependent claims 2 - 12, 17, and 18 do not appear to contain any additional features which, in combination with the features of any claim to which they refer, meet the requirements of the EPC with respect to novelty and/or inventive step, since they are either disclosed by D1, or rendered obvious by the prior art (see passages cited in the search report).